

Environmental Best Management Practices for Small Businesses

Introduction

An environmental best management practice (BMP) is an action or combination of actions implemented to reduce the environmental impacts of business operations. There are two types of pollution prevention: source reduction and recycling. Source reduction reduces or eliminates the generation of waste. Recycling takes used materials, modifies their form, and makes them available for future reuse. The BMPs provided in the fact sheets listed below are a combination of source reduction and recycling strategies, which provide economic as well as environmental and safety benefits.

Each BMP fact sheet focuses on a particular sector, and draws information from several sources, which are listed in the endnotes section of each fact sheet. The BMPs listed in each fact sheet may be used as a guide for your business. Depending on your business' individual needs and technical and financial capacities, the BMPs may require modification. When adapting a BMP to your business, it may be necessary to contact your local regulatory agency to determine permit requirements. It is important to note that the BMPs listed in these fact sheets are intended as a starting point for your business' environmental management plan, and are not all-inclusive. Further information is available through links at the end of each fact sheet. For additional information about regional specific BMPs, or BMPs not covered in these fact sheets, contact your local authorities and regulating agencies. It is not expected that each BMP will work in all situations; each small business must factor in their own needs, resources, and capacities to find the ones that work best for them.

The fact sheets are intended to work in conjunction with the Environmental Protection Agency's *Practical Guide to Environmental Management for Small Business* and its companion book, *Documenting Your Environmental Management Plan*. For copies of these guides, please refer to the links provided on this website.

Each fact sheet is divided into five sections:

- 1) **Sector Introduction:** Provides basic background information on environmental impacts associated with the sector.
- 2) **Best Management Practices:** Divided into two or more subsections. Each subsection consists of a paragraph describing a particular environmental impact, followed by a list of BMPs which address the problem.
- 3) **Investments in Technology:** Supplies additional information on technologies mentioned in the BMPs or provides information on new technologies to consider when making your choice of BMPs to use. Information about returns on investment is provided where possible, but the true payback period will vary greatly, dependent upon your situation. To determine if a particular technology is right for your operations contact a local vendor for more information.
- 4) **Case Study:** Demonstrates the effectiveness of a BMP used in a business.
- 5) **Other Sources:** Provides links to BMP information listed in the fact sheet. Also provides additional resources available to small businesses.



Best Management Practice

Landscaping

Sector Introduction

Landscapers have an important role in protecting the environment and minimizing their environmental impacts. Substances such as fertilizers, herbicides, and pesticides are dangerous chemicals which can contaminate water. Landscapers also have a direct impact on water usage. Over-watering can damage plants and cause pesticides, herbicides, and fertilizers to wash off landscaped areas and contaminate storm water. Storm water goes untreated and is directly deposited into nearby streams, rivers, and the ocean.

This fact sheet lists environmental best management practices (BMPs) for landscaping businesses. The BMPs listed in this fact sheet are only a starting point for your business. Additional suggestions for a wider range of activities can be found using the links in the “Other Sources” section.

Best Management Practices

Water Use

Many areas of the country are suffering from drought. In the summertime, up to 60% of municipal water is used for residential irrigation. Landscapers may choose to adjust their watering practices to minimize impacts on the environment.

- Try using native and other plants that are “climate appropriate”, to reduce the amount of irrigation water required.¹
- Install an irrigation timer to avoid under- and over-watering.¹
- Water early in the morning to reduce evaporation.¹
- Consider using a water meter to ensure that the irrigation system is leak-free.³
- Install a trickle or subsurface irrigation system that provides water directly to the plant roots, and prevents water loss from evaporation and run-off.¹
- Avoid over-watering by installing an irrigation meter to measure the amount of water being applied to an area.¹
- Consider recirculating water through decorative fountains, waterfalls, and ponds.¹
- Use low-flow sprinkler heads rather than turf sprinklers.¹

Pesticide, Herbicide, and Fertilizer Use

Maintaining grounds often involves the use of chemicals to prevent the growth and spread of various plant and

animal pests. Unfortunately, pesticides, herbicides, and fertilizers are potential causes of non-point source contamination and run-off. These substances can filter into and contaminate water bodies, and can harm humans and animals.

- Secure pesticides, herbicides, and fertilizers in a protected area away from wind and rain.⁷
- Do not over-fertilize, and try not to use fertilizer near lakes, ponds, or other water bodies.⁷
- Contact your state or local extension office for suggestions on how to dispose of unusable or unwanted pesticides, herbicides, and fertilizers.⁵
- Use good sanitation practices, and remove weed seeds and soil residues to reduce contamination between areas.⁵
- Determine the need for pest control by identifying pest conditions and population levels, as well as beneficial organism activity.⁵
- Consider keeping field records of areas to track information such as pest problems, treatment methods, and results.⁵
- Apply herbicide soon after weeds have emerged. Weeds are most sensitive at this time.⁵
- Try to apply pesticides, herbicides, and fertilizers when weather conditions are appropriate. Rain and wind will carry the substances away from the intended area.⁵



- Use disease and pest resistant or tolerant plant species.⁶
- Maintain high species diversity and eliminate monocultures to minimize rapid spread of disease.⁶
- Develop thresholds for action and the tolerance level for pests.⁶
- Prune trees and bushes to promote air circulation and light penetration for healthy growth.⁶
- Use mulch to reduce the number of weeds, to help retain soil moisture, and to provide protection against outside temperatures and weather.⁶
- Try botanically and bacterially derived pesticides.⁶
- Use ground cover to reduce soil erosion and improve soil quality.⁶

Investments in Technology

- Consider investing in new irrigation systems, which can automatically adjust for factors such as solar radiation, real-time weather conditions, historical trends, soil moisture, and wind.⁸
- Consider using natural-base pesticides, chitin inhibitor products, pheromones, or other technologically based pesticide products emerging in the market. These substances are less harmful to humans.⁹
- Use a closed handling system when mixing and handling pesticides, herbicides, and fertilizers. Closed handling systems minimize human exposure to these substances.⁵

CASE STUDY Ridgehaven Building San Diego Environmental Services Department

The Environmental Services Department is housed in a 15 year old building which has been retrofitted to be environmentally sustainable. The landscaping outside the building is an example of an environmentally-friendly garden. The landscaping replaced high-water using plants and grass to low-water using native plants. An irrigation system was also installed.

Benefits:

- Saves over 50% on water usage compared to traditional landscaping.
- Native plants require less water and fertilizer.
- Native plants require less pruning and care.

Source: The City of San Diego, “The Greenhaven at Ridgehaven”,
<http://www.sannet.gov/environmental-services/geninfo/ridgehaven/garden.shtml>

Other Sources

- ¹ U.S. Department of Energy; *BMP #3 – Water Efficient Landscaping*,
http://www.eere.energy.gov/femp/technologies/water_bmp3.cfm?print
- ² California Department of Water Resources, *Landscape Water Use Conservation Methods*,
<http://www.owue.water.ca.gov/landscape/conserv/conserv.cfm>
- ³ Water Wise Council of Texas, *Landscape Improvement BMPs: Soil, Mulch, and Maintenance*,
http://www.waterwisetexas.org/landscape_improvements_BMPs.htm
- ⁴ State of Minnesota Department of Agriculture, *Voluntary Pesticide Best Management Practices (BMPs)*,
<http://www.mda.state.mn.us/appd/bmps/bmps.htm#bg>



- ⁵ Portland Oregon Parks and Recreation, *Pest Management Program*, hosted on Cornell University website, <http://environmentalrisk.cornell.edu/PRI/ExternalDocuments/IPMPlan-Portland.pdf>
- ⁶ City of El Monte California, *Landscaping, Gardening and Pest Control Safe Environment Practices and Procedure for Homeowners, Gardeners and Landscapers*, http://www.ci.el-monte.ca.us/citygov/enviro_serv/JLHA/Landscaping.htm
- ⁷ Santa Barbara County Regional Water Efficiency Program, *Be Water Wise!*, <http://www.sbwater.org/WeatherTechnology.htm>
- ⁸ India Department of Sciences and Technology, Technology Information, Forecasting and Assessment Council, *Technology for Futuristic Pesticides: Executive Summary*, <http://www.tifac.org.in/offer/tlbo/rep/TMS051.htm>